Case Study	**Grand Chute Menasha West Sewerage Commission Auto-termal aerobic digestion system**
Standard Industrial Classification (SIC)	Sewerage System/4952
Type of Waste	Stabilized Sludge
Strategy	Improvements to sludge management program through comparative analysis of process technology.
Company Background	The Grand Chute Menasha West Sewerage Commission (GCMWSC) was established in 1981. The facility was built in 1983 and provides sewage treatment services for the Towns of Grand Chute, Menasha and Greenville. The facility operates with nine full-time employees.
Original Process	The previous sludge management program consisted of aerobic digestion, designed to handle 10,000 pounds per day of solids. The stabilized sludge is then land spread at pre-approved sites. The sludge produced met Class B sludge characteristics.
Motivation	The main motivation was to improve process operations to assure adequate treatment capabilities beyond the 20 year design plan. Selection criteria were aimed at identifying treatment technologies that reduce potential environmental liabilities.
Pollution Prevention Process	The Auto-Thermophilic Aerobic Digestion System (ATADS) process is designed to handle 12,500 pounds per day of solids. A unique advantage of the ATADS is its capability to reduce volatile solids (VS) and pathogens at the same time. This technology improved the quality of sludge produced by reducing the pathogen density and reducing the total volume of sludge for land spreading. GCMWSC is now able to certify its sludge as a Class A or Exceptional Quality (EQ) sludge.
Stage of Development	The ATADS was brought on line in July of 1994.
Level of Commercialization	The ATADS technology is well developed in Europe with over 35 active full scale installations, but GCMWSC was the nation's first treatment facility to utilize ATADS as part of its solids processing.
Obstacles	Initial odor concerns related to ammonia were eliminated through the installation of a scrubber and biofilter for the sludge storage complex. These modifications did not require the addition of chemicals.
Material/Energy Balance	

	Description	**Aerobic Digestion**	**ATADs**
Feedstock	sludge	43,500 gal/day	27,700 gal/day
Energy	electricity	2,940 kwh/yr	548 kwh/yr

Waste	volatile solids	21.5% reduction	50% reduction
Disposal	landspread sludge	9,200 yds/yr	4,500 yds/yr

Economics

GCMWSC realized $1,000,000 in cost savings by selecting a process that costs less to implement and produces a higher quality sludge. A comparable conventional aerobic digestion system upgrade would have cost $2,750,000. The costs to upgrade the sludge handling portion of the project are summarized below.

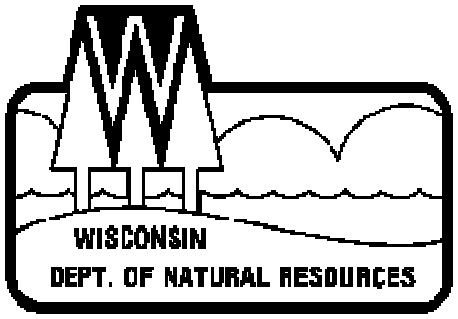
Capital Costs	Description	Cost
New equipment cost	a) process equipment and design	$428,000
	b) tanks piping, instrumentation, odor control	$503,500
	c) building	$822,000
R&D engineering; start up training		$10,000
Space needs (saving)	building	($50,000)
	Total Costs	$1,713,500

Operating Costs	Description	Cost Old Process	Cost New Process	Cost/Savings
Labor		$50,000	$25,000	$25,000
Maintenance		$10,000	$5,000	$5,000
Testing		$5,000	$2,000	$3,000
Paperwork		$5,000	$1,000	$4,000
small>Waste handling		$35,000	$20,000	$15,000
Utilities		$65,350	$51,000	$14,350
		Total Savings per year		$66,350

Payback Period

There was no payback period for upgrading the solids management program calculated. However, it is apparent that the solids management program at GCMWSC is saving money.

Benefits	Some of the benefits of producing an Exceptional Quality (EQ) sludge include: no tracking of cumulative or annual pollutant loading rates, unlimited agricultural site life, no public site access restrictions, and no crop growth restrictions on food or grazing crops. The sludge also has the advantage of future marketability as a soil amendment.
Technology Transfer	The technology applied at GCMWSC is currently commercially available and can be applied in similar situations.
Company Address	Grand Chute Menasha West Sewerage Commission 1965 W. Butte Des Morts Beach Road Neenah, Wisconsin 54956
Contact Person	James R. Kirk, Plant Superintendent (414) 739-7921
Pollution Prevention Resources	**Free, On-site Technical Assistance** University of Wisconsin Extension Solid and Hazardous Waste Education Center Milwaukee area: 414/475-2845 Remainder of state: 608/262-0385 **Pollution Prevention Information Clearinghouse** Wisconsin Department of Natural Resources Cooperative Environmental Assistance 608/267-9700 or e-mail: cea@dnr.state.wi.us



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